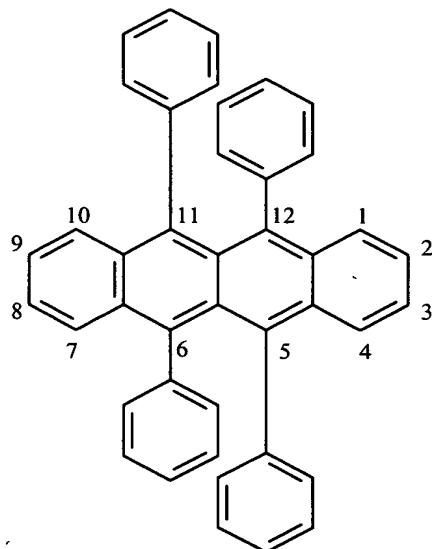


WHAT IS CLAIMED IS:

1. An OLED device comprising a light-emitting layer (LEL) containing a host and an emitting dopant located between a cathode and an anode wherein the dopant is an orange-red light emitting rubrene derivative represented by formula (I):



Formula (I)

wherein:

- a) there are identical branched alkyl or non-aromatic carbocyclic groups at the 2- and 8-positions;
- b) the phenyl rings in the 5- and 11-positions contain only para-substituents identical to the branched alkyl or non-aromatic carbocyclic groups in paragraph a); and
- c) the phenyl rings in the 6- and 12-positions are substituted.

2. The device of claim 1 comprising a further light-emitting compound to provide a white light emission.

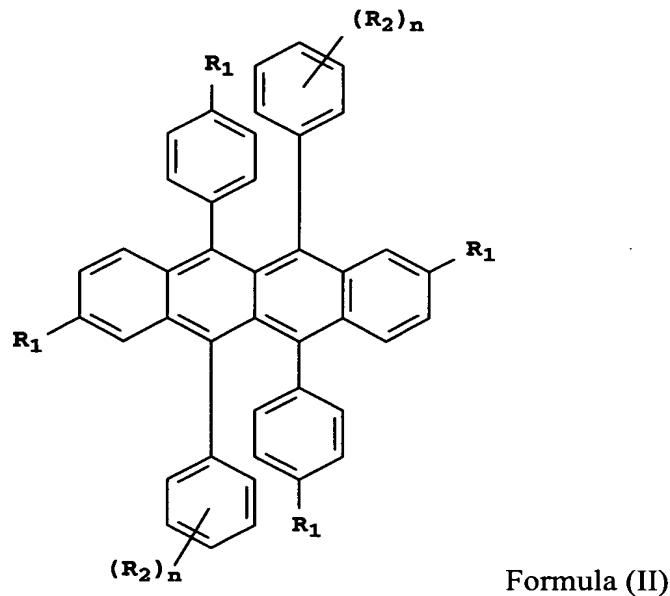
3. The device of claim 2 further comprising a blue light-emitting compound to provide a white light emission.

4. The device of claim 2 further comprising a filter over-lying the device.

5. The device of claim 2 wherein the layer comprises a host and dopant where the dopant is present in an amount of up to 10%-wt of the host.

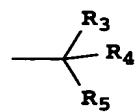
6. The device of claim 5 wherein the dopant is present in an amount of 0.1-5.0%-wt of the host.

7. The device of claim 1 wherein the dopant is represented by formula (II):



wherein

R₁ is represented by the formula;



wherein each of R₃, R₄ and R₅ is hydrogen or an independently selected substituent with no more than one being hydrogen or R₃, R₄ and R₅ taken together can form a mono- or multi-cyclic ring system;

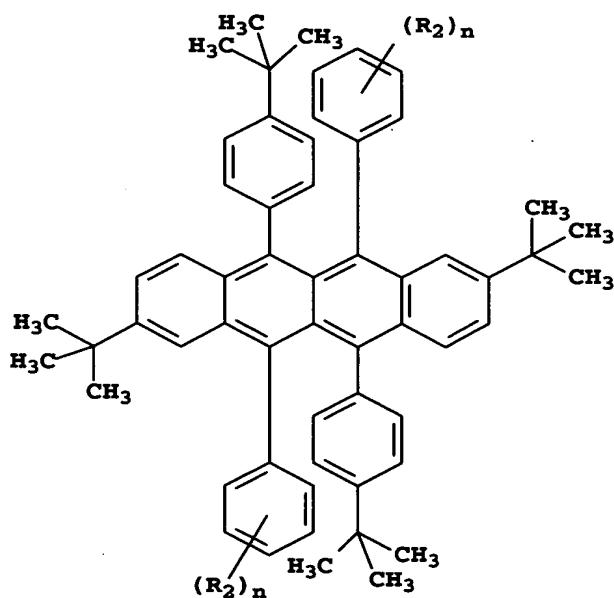
R₂ is a substituent group;

n is 1-5;

provided that all R₁ groups are the same; and

provided further, that the R₂ groups, their location and n value on one ring are the same as those on the second ring.

8. The device of claim 1 wherein the dopant is represented by formula (III):



Formula (III)

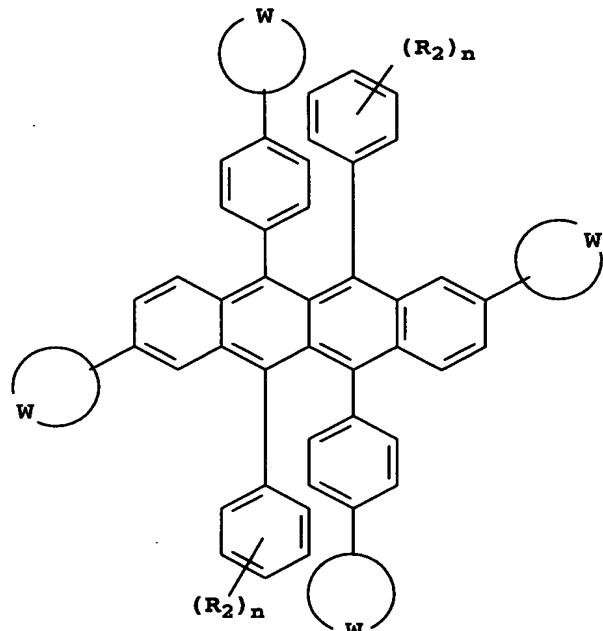
wherein

R₂ is a substituent group;

n is 1-5; and

provided that the R₂ groups, their location and n value on one ring are the same as those on the second ring.

9. The device of claim 1 wherein the dopant is represented by formula (IV):



Formula (IV)

wherein

W represents the atoms necessary to complete a non-aromatic heterocyclic or non-aromatic carbocyclic ring group;

R₂ is a substituent group;

n is 0-5; and

provided that the R₂ groups, their location and n value on one ring are the same as those on the second ring;.

10. The device of claim 7 comprising a further light-emitting compound to provide a white light emission.

11. The device of claim 10 further comprising a blue light-emitting compound to provide a white light emission.

12. The device of claim 10 further comprising a filter over-lying the device.

13. The device of claim 9 wherein W represents the atoms to complete a cyclohexane ring.

14. The device of claim 9 wherein W represents the atoms to complete an adamantan ring.

15. The device of claim 7 wherein R₂ is located in meta or para positions of the phenyl groups.

16. The device of claim 7 wherein R₂ are independently selected from the group consisting of fluorine, fluorine containing groups, alkyl, aryl, alkoxy and aryloxy groups.

17. The device of claim 7 wherein R₂ is phenyl.

18. The device of claim 7 wherein R₂ is fluorine.

19. The device of claim 7 wherein R₂ is a fluorine-containing group.

20. The device of claim 7 wherein R₂ is selected from trifluoromethyl, pentafluoroethyl and fluorinated-phenyl groups.

21. The device of claim 7 wherein R₃, R₄ or R₅ is selected from trifluoromethyl, pentafluoroethyl and fluorinated-phenyl groups.

22. The device of claim 1 wherein the host is an amine compound.

23. The device of claim 1 wherein the host comprises N,N'-di-1-naphthalenyl-N,N'-diphenyl-4, 4'-diaminobiphenyl.

24. The device of claim 7 wherein the substituents are selected to provide an emitted light having an orange-red hue.

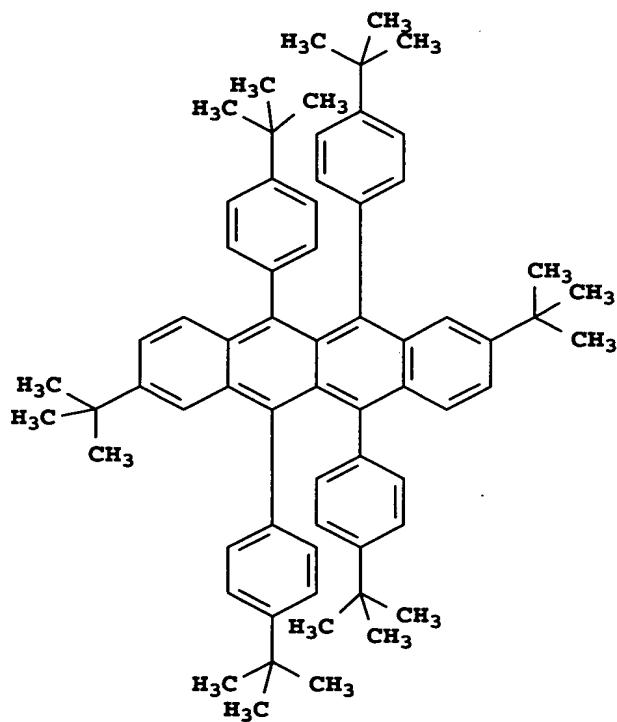
25. The device of claim 7 wherein the substituents are selected to provide a reduced loss of initial luminance compared to the device containing no rubrene.

26. The device of claim 7 wherein the layer comprises a host and dopant where the dopant is present in an amount of up to 10%-wt of the host.

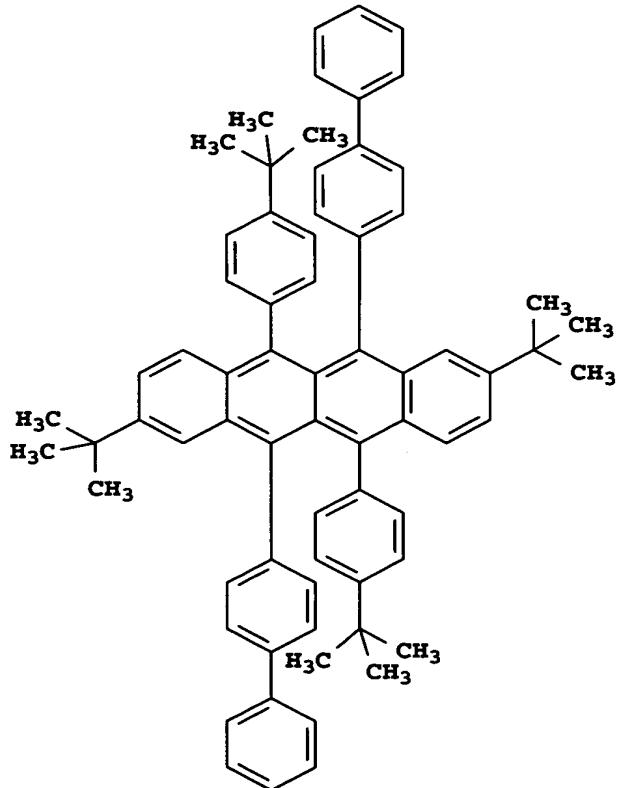
27. The device of claim 26 wherein the dopant is present in an amount of 0.1-5.0%-wt of the host.

28. The device of claim 1 wherein the rubrene compound is selected from the following:

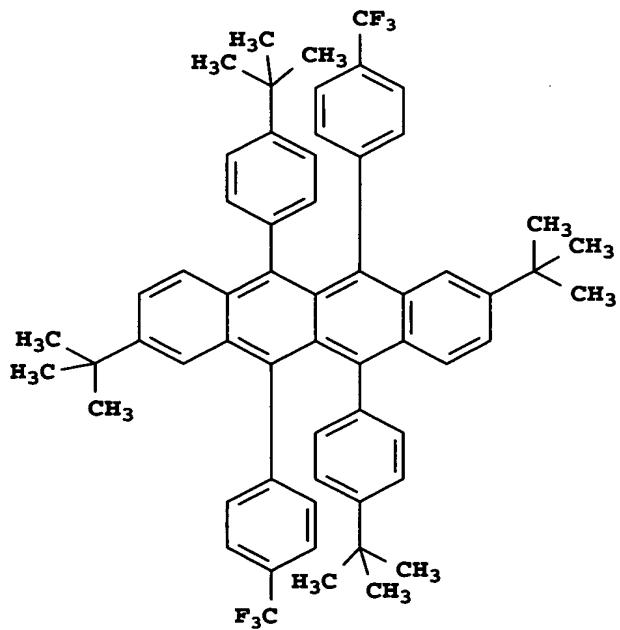
Inv-1



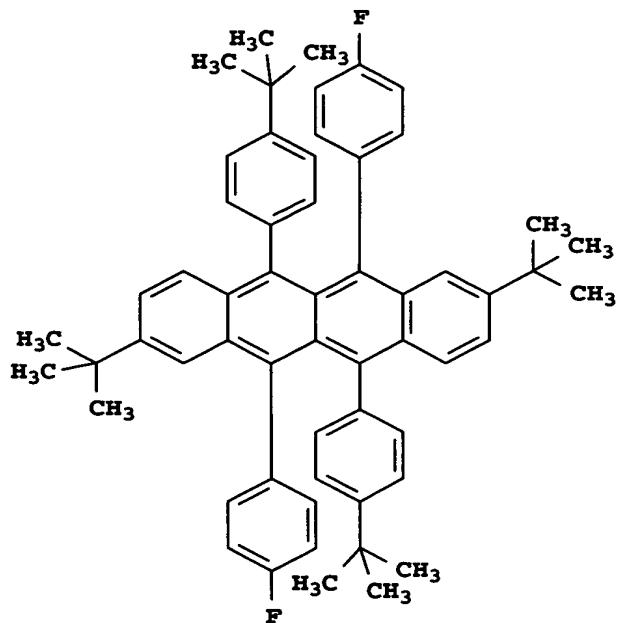
Inv-2



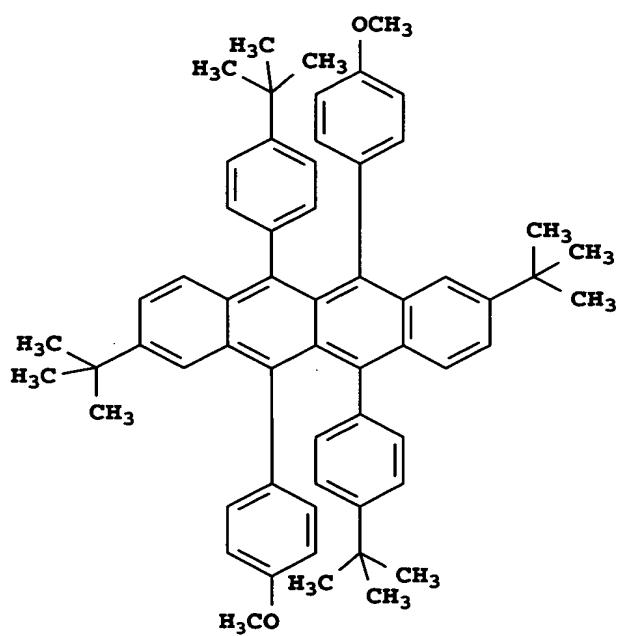
Inv-3



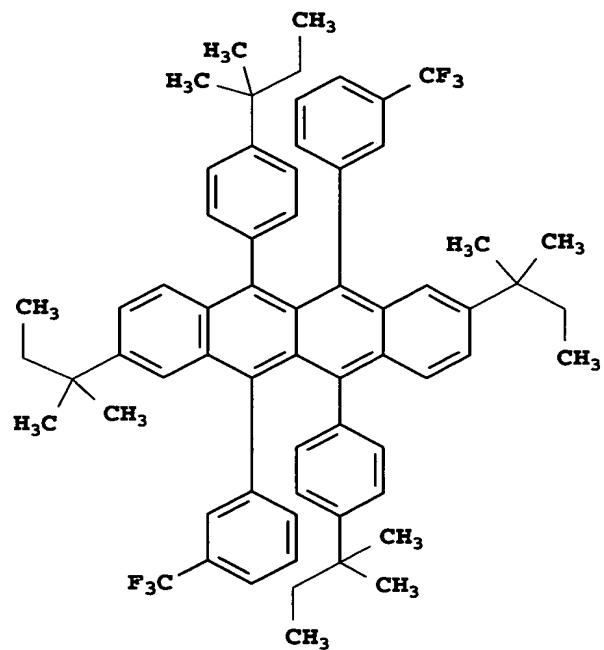
Inv-4



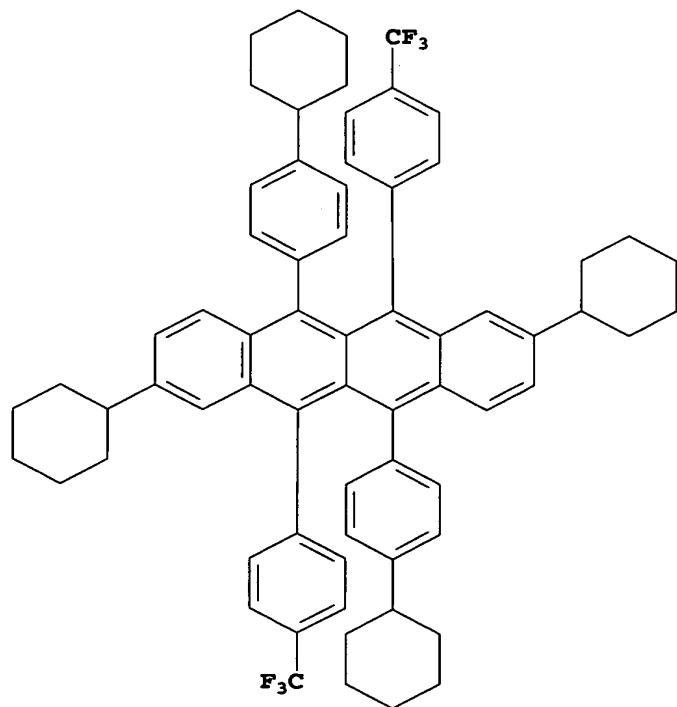
Inv-5



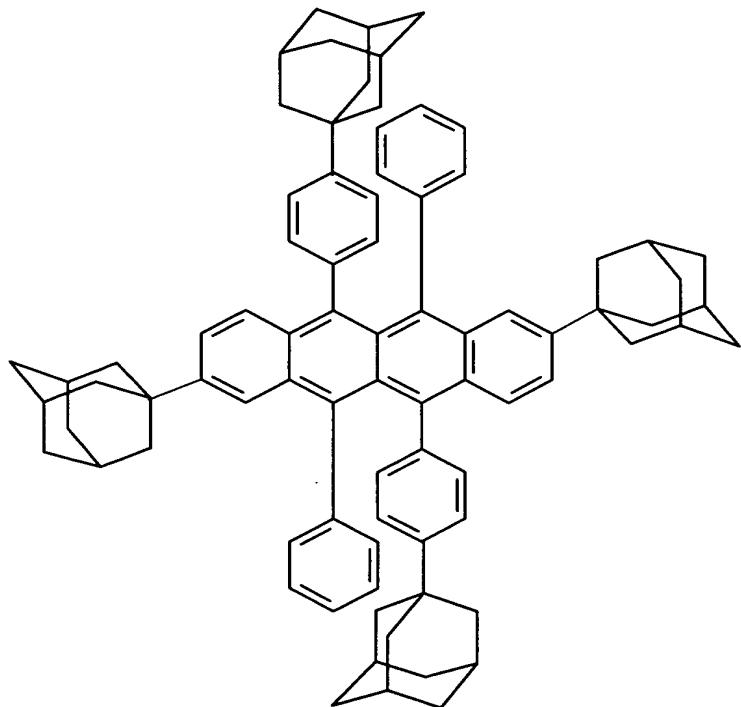
Inv-6



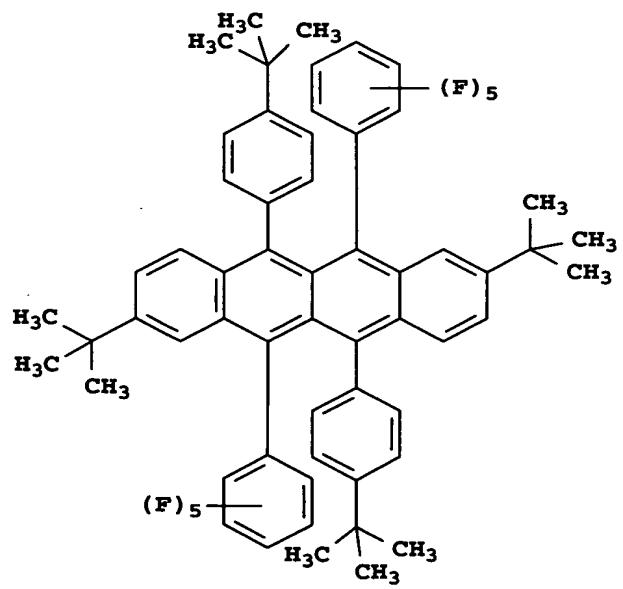
Inv-7



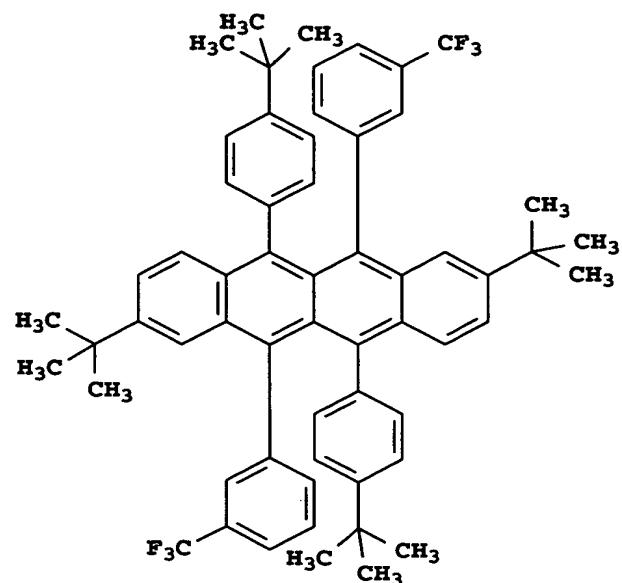
Inv-8



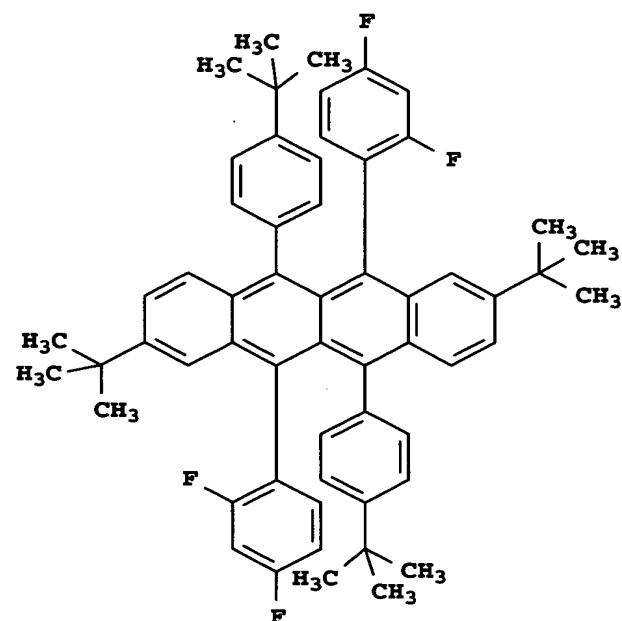
Inv-9



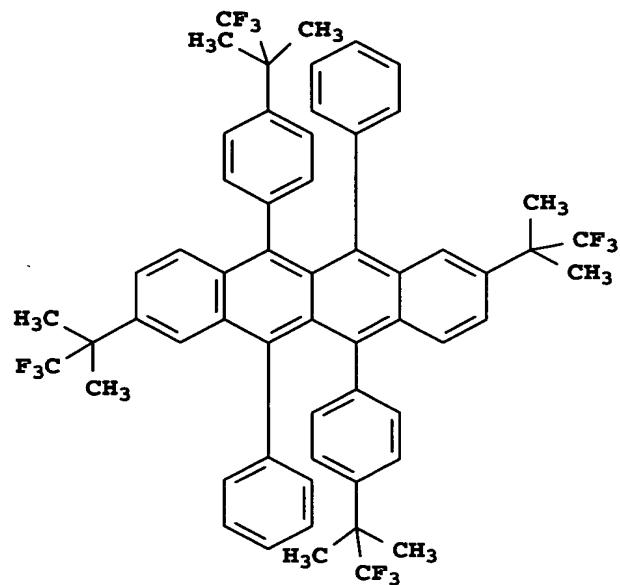
Inv-10



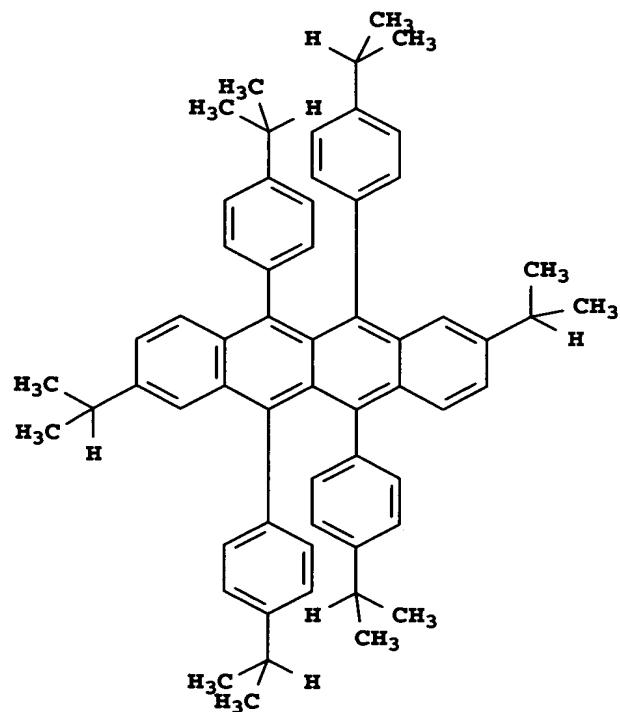
Inv-11



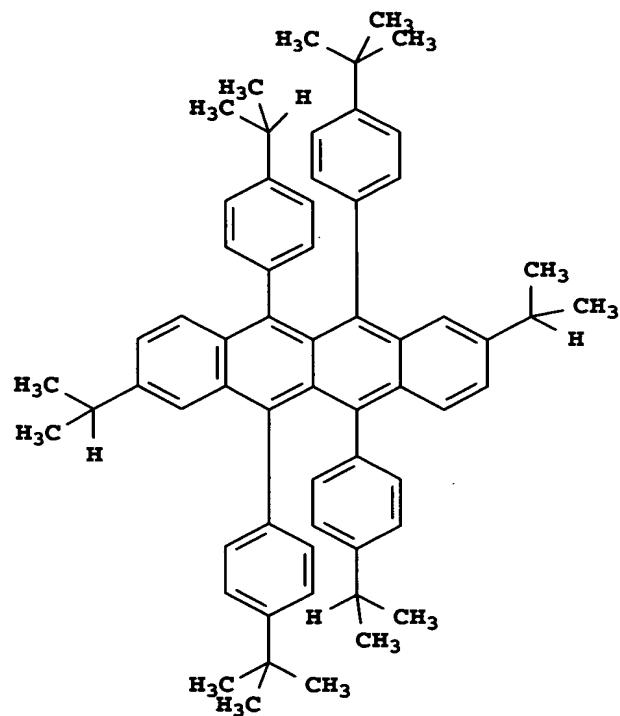
Inv-12



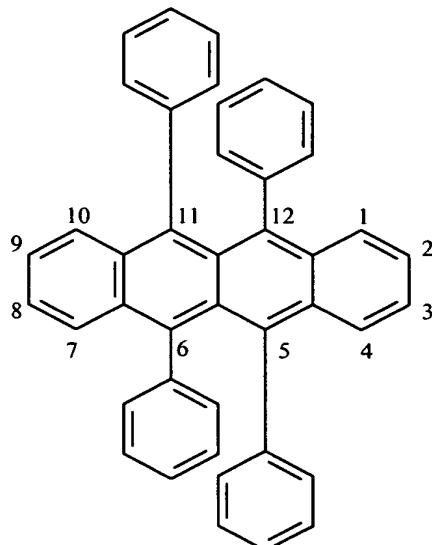
Inv-13



Inv-14



29. An OLED device comprising a light-emitting layer (LEL) containing a host and a dopant located between a cathode and an anode wherein the emitter is an orange-red light emitting rubrene derivative represented by formula (I):



Formula (I)

wherein:

- a) there are identical branched alkyl or non-aromatic carbocyclic groups at the 2- and 8-positions;
- b) the phenyl rings in the 5- and 11-positions contain only para-substituents identical to the branched alkyl or non-aromatic carbocyclic groups in paragraph a);
- c) the phenyl rings in the 6- and 12-positions are substituted or not; provided that the wavelength of maximum emission (λ_{\max}) in ethyl acetate solution is such that $563\text{nm} < \lambda_{\max} \leq 650\text{nm}$.

30. An OLED device of claim 29 wherein the rubrene derivative has a wavelength of maximum emission (λ_{\max}) in ethyl acetate solution such that $565\text{nm} < \lambda_{\max} \leq 625\text{nm}$.

31. A light-emitting device containing the OLED device of claim 1.

32. A light-emitting display containing the OLED device of claim 1.

33. A method of emitting light comprising subjecting the device of claim 1 to an applied voltage.